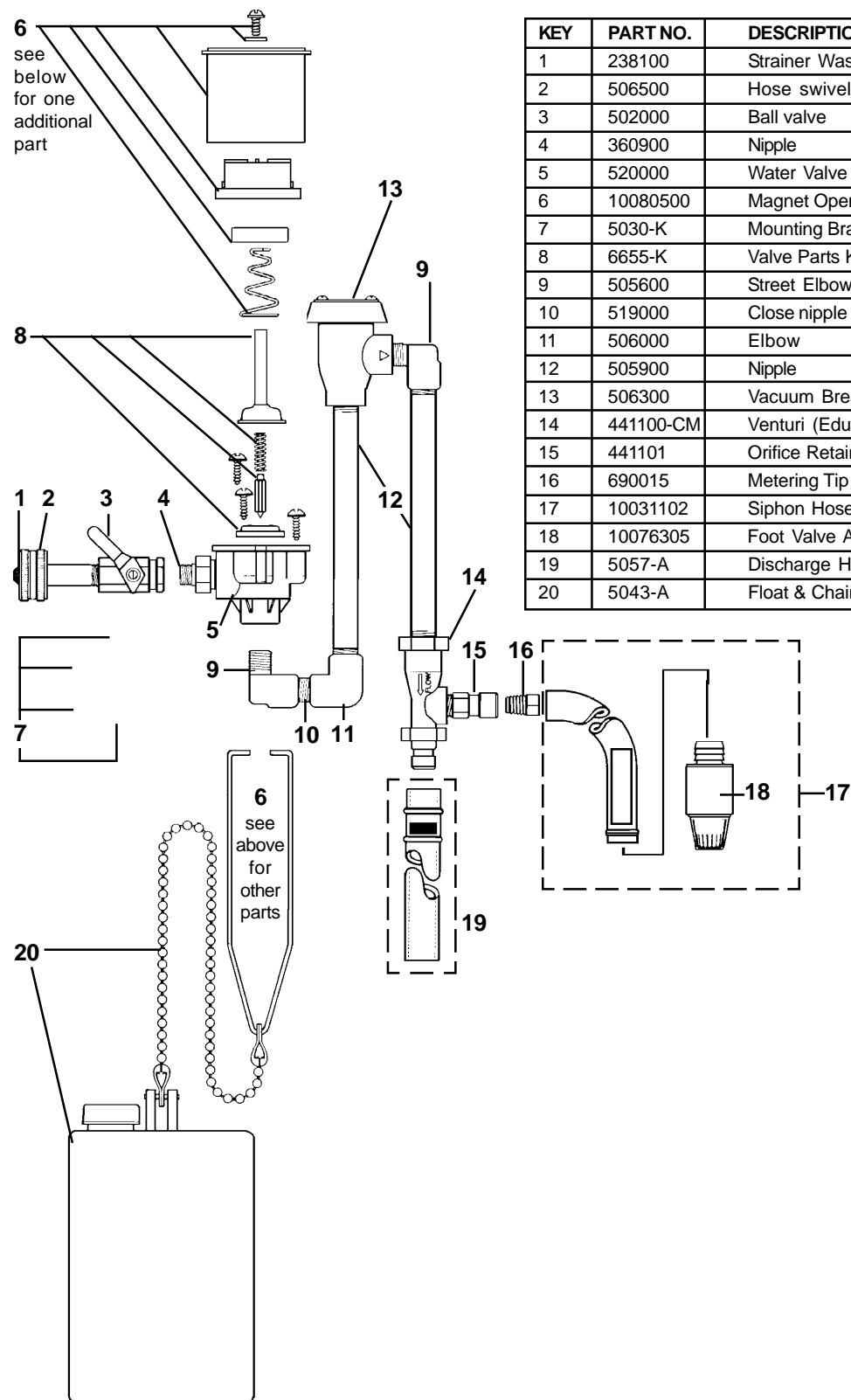


**FIGURE 2**  
**CIMCOOL Mix Master Automatic Proportioner (EQ02513) Parts, Exploded View**

KEY	PART NO.	DESCRIPTION
1	238100	Strainer Washer
2	506500	Hose swivel
3	502000	Ball valve
4	360900	Nipple
5	520000	Water Valve Body
6	10080500	Magnet Operator Parts Kit
7	5030-K	Mounting Bracket Kit
8	6655-K	Valve Parts Kit
9	505600	Street Elbow
10	519000	Close nipple
11	506000	Elbow
12	505900	Nipple
13	506300	Vacuum Breaker
14	441100-CM	Venturi (Eductor Body) Assy.
15	441101	Orifice Retainer
16	690015	Metering Tip Kit (690015)
17	10031102	Siphon Hose/Foot Valve Assy.
18	10076305	Foot Valve Assy
19	5057-A	Discharge Hose Assy.
20	5043-A	Float & Chain Assy.



# CIMCOOL® MIX MASTER AUTOMATIC PROPORTIONER

Part Number EQ02513  
 UPC 65250502513

## OPERATING INSTRUCTIONS/INSTALLATION GUIDE

### DESCRIPTION

The CIMCOOL Mix Master Automatic Proportioner is a simple, economical, and accurate method to mix CIMCOOL metalworking fluid concentrate with water. The proportioner automatically mixes CIMCOOL metalworking fluid concentrate with water and fills a reservoir to a pre-determined level. The most important requirement in the use of metalworking fluids is maintaining the proper mix ratio. This is easily controlled with the use of the CIMCOOL Automatic Mix Master Proportioner.

The CIMCOOL Mix Master Automatic Proportioner is mounted vertically on a fluid reservoir wall. The siphon hose is placed in a 55-gallon (208 L) concentrate drum. A water line is connected to the proportioner. When the ball valve is turned to the "on" position (water line open), the

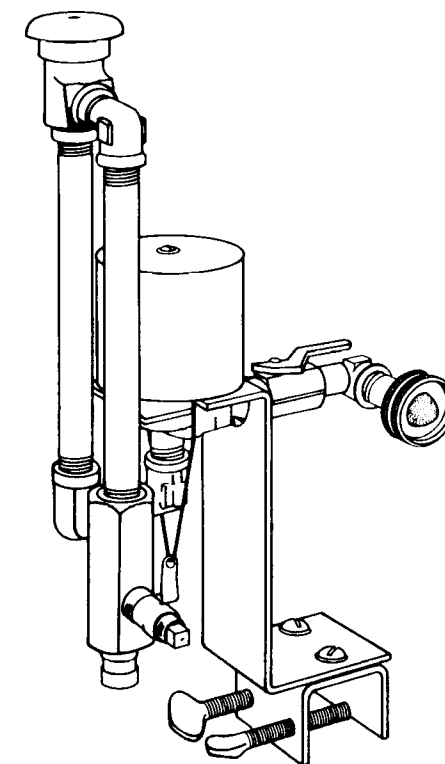
metalworking fluid concentrate is siphoned from the 55-gallon (208 L) drum, mixed with water, and discharged into the reservoir at approximately 3 to 4\* gallons per minute until the reservoir is filled to the pre-determined level at which time the proportioner automatically shuts off.

The two main requirements for successful operation of the equipment are a minimum water pressure of 15 psig (101 KPa) (flow pressure) and selection of the proper metering tip.

The unit features a vacuum breaker to prevent backflow of fluid concentrate to the tap water line (in compliance with OSHA regulation 29 CFR section 1910.141 (b)(iii)).

The unit also features a foot valve/strainer to prevent backflow of concentrate into the drum.

\* 3.7 gpm at 40 psig flow pressure (14 LPM at 275 KPa)



### WARNING:

Do not use the proportioner where water pressure exceeds 90 psig (620 KPa). Do not use the proportioner with a water supply temperature above 170°F (77°C). Use caution when handling chemicals; wear protective eyewear and gloves to prevent contact with the chemicals. Failure to follow these instructions may result in personal injury.

For more specific information on the safety of the various CIMCOOL metalworking fluids, obtain the Product Information Folder(s) and follow the recommendations provided.

## INSTALLATION

### MOUNTING

**The CIMCOOL Mix Master Automatic Proportioner must be mounted in a vertical position — not tilted in any direction as noted by visual inspection, and no higher than five feet (1.5 m) above the concentrate drum. The proportioner must be positioned so that the venturi body is above the fluid concentrate drum.**

**Drum Style** — Clamp the proportioner to the edge of the container using the U clamp (G) and thumb screws provided (Figure 1).

**Flanged Reservoir** — Remove the U clamp from the proportioner assembly. Reinstall the U clamp and mount the proportioner as shown in Figure 1, inset 1.

**Assembly** — Refer to the illustrations and lettered reference points in Figure 1.

A. **Water Supply:** The minimum flow pressure of 15 psig (101 KPa) is required. If the water pressure varies, install a pressure regulator to minimize changes. The proportioner requires a ½ inch (1.3 cm) I.D. water line (A) with a ¾ inch (1.9 cm) female garden hose fitting.

**B. Discharge Hose:** The discharge hose (B) must be installed for the proportioner to properly mix the metalworking fluids. Attach the flooding ring end of the discharge hose to the venturi body by using slip joint pliers to slide the clamp over the venturi mixer outlet groove.

The discharge hose is placed in the reservoir at a point below the mix level where the flow activates the magnetic valve to refill the reservoir. This will prevent foaming.

Extending the discharge hose length will affect the concentration ratio due to back pressure. If a longer hose is required, it will be necessary to determine the correct metering tip by trial and error.

**C. Metering Tip:** Select the proper metering tip (C) (See Table 1). Contact CIMCOOL Technical Service (513-458-8199) for selecting the proper metering tip

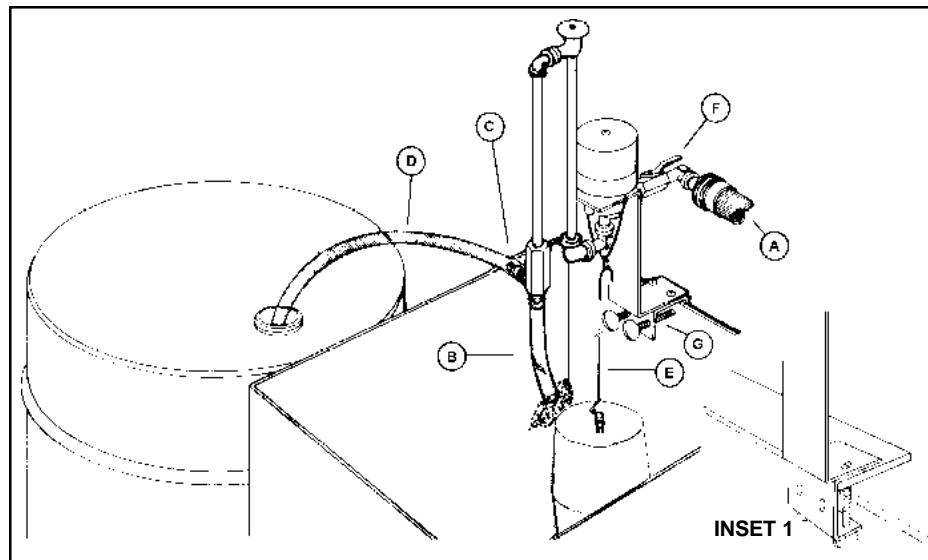
to obtain the recommended metalworking fluid concentration. Thread the metering tip into the orifice retainer by hand (see detail, Key 15, in Figure 2). One set of color-coded plastic metering tips is enclosed with each unit. Please refer to Table 1 for the tip identification chart.

**D. Siphon Hose:** Insert the weighted foot valve into the concentrate drum. Attach the opposite end of the siphon hose (D) to the orifice retainer.

**E. Level Adjustment:** The adjustable chain length (E) permits use of the CIMCOOL Mix Master Automatic Proportioner on shallow or deep reservoirs. Position the float at the desired level.

**F. On-Off Valve:** The manual on-off valve (F) is used to turn off the CIMCOOL Mix Master Automatic Proportioner when not in use. Turn off when changing the metering tip or concentrate drum, and when draining the reservoir for cleaning or maintenance.

**FIGURE 1**



**MIX RATIOS**

The CIMCOOL Mix Master Automatic Proportioner is a venturi type proportioner which depends on water pressure and a metering tip to obtain a particular mix ratio.

The mix ratios were obtained at a flow pressure of 40 psig (275 KPa). Checking the actual mix ratio or concentration obtained at startup with a refractometer or titration kit is recommended.

Variation in fluid temperatures and water pressures will have a slight affect on the mix ratio. These variations can be minimized by

1. Installing a pressure regulator on the water line (remembering that the minimum water pressure is 15 psig (101 KPa) to operate the proportioner).
2. Using the fluid concentrate at room temperature

Please be aware that changing the discharge hose length will affect the mix ratio. The standard Mix Master Automatic Proportioner has approximately two feet (.6 m) of discharge hose. The discharge hose must have an open or gravity discharge and the flooding ring must be installed in the discharge hose for proper operation of the proportioner.

As the fluid level rises in the reservoir, the maximum fill level can be set by adjusting the float chain length (E). When the float rises, the magnetic valve will close, stopping the water flow to the proportioner. When the reservoir level is lowered, through withdrawal of premixed fluid, the float level will fall, thereby opening the magnetic valve and sending water to the proportioner. In this manner the automatic proportioner will continue to maintain a reservoir full of premixed fluid, where the fluid level will vary approximately two inches (5.0 cm) in the tank.

**TABLE 1: TIP IDENTIFICATION CHART**

COLOR	ORIFICE DIAMETER	DRILL SIZE
Gray	.128	30
Black	.098	40
Light Brown/Beige	.070	50
Red	.052	55
White	.043	57
Blue	.040	60
Medium Brown/Tan	.035	65
Green	.028	70
Orange	.025	72
Dark Brown	.023	74
Yellow	.020	76
Purple	.014	79
Pink	.010	87
Clear	Your Choice	(No Hole)

**TROUBLESHOOTING**

PROBLEM	CORRECTIVE ACTION										
	Check water pressure (1)	Check metering tip (Table 1)	Check foot valve/strainer	Check discharge hose/flooding ring	Check fluid temperature	Check venturi/metering tip for residue or scale	Inspect/tighten water hose fitting and on/off ball valve	Clean/replace gasket on vacuum breaker	Clean with warm cleaning fluid (consider use of deionized water)	Clean inlet strainer	Check manual operation of solenoid
1. Unable to obtain proper mix ratio	X	X	X	X	X	X					
2. Mix ratio varies	X				X						
3. Proportioner leaks							X	X			
4. Water enters concentrate drum			X				X	X			
5. Scale forms on venturi or metering tip									X		
6. Unable to obtain water flow										X	
7. Float does not activate solenoid											X

(1) Install pressure regulator to minimize changes in tap water pressure. Minimum flow pressure to be 15 psig (101 KPa).

**MAINTENANCE**

The CIMCOOL Mix Master Automatic Proportioner features simple operation and low maintenance. With few moving parts there is little to wear out. However, it is recommended that the venturi assembly and metering tip area are inspected periodically to insure that no residue is forming on the unit. If a residue or scale is forming (most likely due to hard water reacting with the product), cleaning with warm water and a cleaning fluid designed to remove scale is recommended. As the tubing shows signs of deterioration, replacement is recommended.

**SALES**

The CIMCOOL Mix Master Automatic Proportioner part number is EQ02513. Use this part number when placing an order with your Milacron Distributor

**SERVICE**

For additional information contact: your Milacron Industrial Distributor or Milacron Customer Service: 888-246-2665

**SPARE PARTS**

Spare parts are available from your Milacron Industrial Distributor. (See Figure 2).